

Name: \_\_\_\_\_

Herpetology  
Fall 2014  
Exam 2

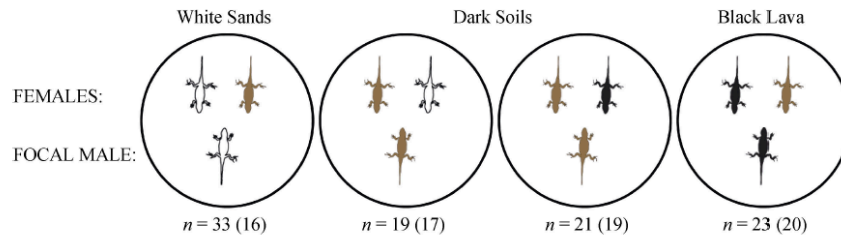
| Question | Points | Score |
|----------|--------|-------|
| 1        | 20     | _____ |
| 2        | 20     | _____ |
| 3        | 20     | _____ |
| 4        | 20     | _____ |
| 5        | 20     | _____ |

Total    100 \_\_\_\_\_

*Note: The exam is printed one-sided, not because I hate the Earth  
but to give you space to write longer answers if you need to.*

1. In White Sands, New Mexico, lizards have adapted to the stark white sand substrate by becoming pale white. They are surrounded by darker lizards that live on dark sands habitats. Nearby, one can also find populations of black lizards that live on lava flows.

Below is Figure 1 from Hardwick et al. (2013 Current Zoology), showing the experimental design for their study. Based on this figure, explain what Hardwick et al. were trying to figure out.



**Fig. 1 Staged arena encounters occurred in the natural territory of White Sands (white), dark soils (grey), and black lava (black) focal males**

We used a sequential mate preference design to examine the response of each focal male to both local and foreign females. The number of total trials conducted for each category is provided with the number of trials with male behavior in parentheses.

(Make sure your answer includes a hypothesis, a description of the experimental design, a description of the data collected, and an explanation of how the possible results of the experiment will allow you to address the hypothesis. Use the back of the page if you need!)

(20 points)

2. Reptiles and amphibians have shared features of development, but also differ in important ways.

A. State and describe three ways that reptile and amphibian development is **similar** (6 points).

B. State and describe three ways that reptile development **differs** from amphibian development (6 points).

(20 points)

3. You are cursed by an evil wizard. “Zim Zam Zoo!” And suddenly you are changed into a desert reptile. The sun beats down, and there is no water for miles. You can only survive if you know enough about herp anatomy and physiology.

How can you get enough water to survive? Give an example of a specific adaptation you might have, and state which real herp inspired your idea.

How can you maintain thermal equilibrium? Again, give an example of a specific adaptation you might have, and state which real herp inspired your idea.

How might your adaptations change if you were turned into a newt?

(20 points)

4. The figure below is taken from Holding et al. J. Herp in press (from Emily Taylor's lab). Please EXPLAIN and INTERPRET this figure. Your answer should include a basic description of the experimental design, an explanation of what is shown in the figure, and an interpretation of what it means.

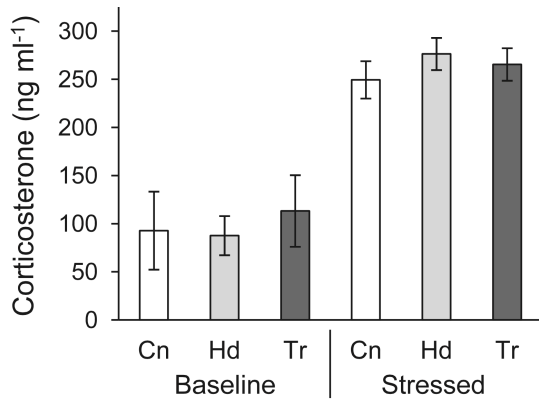


FIG. 1. Baseline and stressed corticosterone (CORT) concentrations in the plasma of translocated (Tr), handled (Hd), and undisturbed control (Cn) male *Crotalus oreganus oreganus* during their final capture, shown as mean  $\pm$  1 SE.

(20 points)

5. A friend posts this article on your facebook wall. He says “OMG DID YOU SEE THIS LOL WAT.”

### **Man to be ‘eaten alive’ by anaconda on TV**

NEW YORK (CNNMoney) — You would think that having a blindfolded Nik Wallenda walk on a tightrope would be enough to feed the Internet’s appetite.

Yet, the Discovery Channel’s latest must watch program “Eaten Alive” shows otherwise. According to Discovery’s website, “Eaten Alive” will include wildlife filmmaker Paul Rosolie donning a protective suit which will allow him to be swallowed up alive by an anaconda.

Yes, he’s choosing to get eaten by a giant snake.

While some on the Internet have balked at the stunt wondering how it could ever be real, Discovery’s website has the show scheduled for December 7th.

Unlike other big events on Discovery, “Eaten Alive” was taped rather than live. This, plus the fact that Rosolie is tweeting proves that he got out alive.

“If u know me – I would never hurt a living thing,” Rosolie tweeted. “But you’ll have to watch #EatenAlive to find out how it goes down!”

...

Please respond herpetologically.

Extra credit:

What is the relationship between Jurassic Park and Life in Cold Blood? (hint: your answer should include some sort of familial relationship)